README file for supporting the ORACLES mission with EPIC Aerosol Index maps

This readme file provides information on the daily Aerosol Index and reflectivity maps from NASA's EPIC (Earth Polychromatic Imaging Camera) on NOAA's DSCOVR (Deep Space Climate Observatory) platform (http://epic.gsfc.nasa.gov/epic.html), produced in support of the ORACLES mission (https://espo.nasa.gov/ORACLES).

Daily EPIC L1-B files (version r01) are available from the Atmospheric Science Data Center (ASDC) at NASA Langley Research Center. The UV Aerosol Index (AI) and the 388 nm Lambert Equivalent Reflectivity (LER388) are calculated using the EPIC near-UV aerosol algorithm (EPICAERUV version 0.1.2).

Image file names are self-explanatory for UVAI (e.g., "uvai_YYYYMMDDhhmmss_epic.jpg") and reflectivity (e.g., ler388_YYYYMMDDhhmmss_epic.jpg") maps, respectively, that include time information as follows: four digit year (YYYY), followed by two digit month (MM), day (DD), hour (hh), minute (mm) and second (ss) in UTC.

Maps are drawn with longitudinal and latitudinal intervals of 60° and 90°, respectively. In addition, a circle indicating the 60° satellite zenith angle has been drawn. The high noise level beyond this viewing angle is associated with limitations of the radiative transfer calculation at near limb observing conditions.

Absorbing aerosols such as carbonaceous particles from agriculture-related or boreal fires, desert dust, or volcanic ash yield positive UVAI values. Over land all positive UVAI values are associated with absorbing aerosols. Over the oceans, on the other hand, UVAI values less than 0.5 may also represent ocean color effects. Negative UVAI values are generally associated with scattering effects of aerosols and clouds.

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